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Original article

Psychiatric comorbidity in African patients with epilepsy – Experience from Sierra Leone

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ABSTRACT

Objective: Epilepsy is associated with a significant burden of psychiatric comorbidity, including depression and anxiety disorders. However, paucity of data exists regarding the impact of epilepsy on mental health of patients in the setting of sub-Saharan Africa, where these comorbidities are under-recognized and under-treated. We carried out a cross-sectional descriptive study to investigate the prevalence and determinants of depression and anxiety among people with epilepsy in Sierra Leone.
Method: A screening tool previously validated in the primary healthcare setting in Zambia was administered to adult patients in our epilepsy clinics in Freetown and Kenema, Sierra Leone. In addition, various socio-demographic and clinical characteristics were recorded for each patient.
Results: A total of 142 patients were included. The mean screening score was 16.3 out of 40, with 39 (27.5%) patients scoring above the diagnostic cut-off point for anxiety and/or depression. Variables showing a significant association with the presence of psychiatric comorbidity included female gender ($p = 0.015$), seizure frequency of >2 per month ($p = 0.001$), and self-reporting of sedation and/or dizziness as side effects of anti-epileptic medications ($p = 0.006$).
Conclusion: Symptoms of anxiety and depression are common in epilepsy patients in Sierra Leone. Given the significant negative impacts of such comorbidity on those affected, primary healthcare workers in sub-Saharan countries should be trained to inquire about anxiety and depression symptoms in epilepsy patients, and implementation of screening programs should be considered.

1. Introduction

Epilepsy is one of the commonest neurological disorders, with approximately 70 million people affected worldwide.[1] While a significant burden of morbidity is directly related to the physical effects of seizures, epilepsy is also associated with a plethora of psychological, social and economic consequences for those affected. As such, epilepsy can have a greater impact on a person's quality of life than many other chronic conditions.[2,3]

It is estimated that 80% of people with epilepsy (PWE) live in low-income regions such as sub-Saharan Africa, where the prevalence of the condition is substantially higher than in the Western world.[1] In this setting, the effects of epilepsy on individuals and their communities can be particularly far-reaching. The condition is commonly associated with misunderstanding and fear, often being perceived as a mental illness, contagious disease or demonic manifestation, with resultant stigmatization and social discrimination.[4] Furthermore, due to the limited human and material resources, epilepsy is under-diagnosed and options for treatment limited, contributing to high prevalence of poorly controlled seizures and encouraging potentially harmful traditional practices.[5]

Co-morbid mental health conditions including depression and anxiety disorders are common in epilepsy, with reported prevalence rates ranging from 15% to 60% worldwide.[6,7] These can have profound negative impacts on the affected individuals' social functioning and quality of life. In fact, depression has been demonstrated to produce a stronger effect on quality of life than seizure frequency.[8–10] Seizure control may also be affected; depression has been associated with higher levels of perceived seizure severity,[11] as well as with increased seizure frequency and the risk of persistent disabling seizures.[12,13] Furthermore, history of psychiatric illness more than doubles the likelihood of the

Abbreviations: PWE, people with epilepsy; SL, Sierra Leone; AED, anti-epileptic drugs; DSM, Diagnostic and Statistical Manual.

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patient becoming refractory to anti-epileptic drugs (AED).[14] Importantly, presence of depression and anxiety symptoms has been associated with suicidal tendencies in PWE,[15] with suicide accounting for 11–33% of deaths in PWE.[16]

There is paucity of data regarding psychiatric co-morbidities in epilepsy in the setting of sub-Saharan Africa. While variable prevalence rates comparable to those in the Western world have been reported, under-diagnosis and under-treatment are common.[17–19] This was strikingly highlighted in a recent Zambian study by Mbewe et al., who identified only 1% rate of diagnosis of psychiatric co-morbidity in a group of patients receiving epilepsy care, while retrospective analysis revealed presence of depression and/or anxiety symptoms in 60% of these.[19] Given that the majority of epilepsy care in sub-Saharan Africa is provided by primary healthcare workers with extremely limited training in either neurology or psychiatry, coupled with the unique socio-cultural and economic challenges in the region, the barriers to effective recognition and treatment of co-morbid psychiatric conditions among PWE here are greater than elsewhere.

We carried out a pilot study investigating the prevalence and determinants of depression and anxiety in PWE in Sierra Leone (SL), where this topic has previously not been investigated. Exploring the complex interplay between epilepsy and mental health disorders is crucial in improving quality of epilepsy care and tackling the notion of mental illness in epilepsy as a neglected public health domain in the sub-Saharan setting.

2. Methods

This cross-sectional descriptive study was carried out in the cities of Freetown and Kenema, SL. The study data were collected during the period of 3rd March to 22nd April 2014 at outpatient clinics held in both cities. Connaught Hospital in Freetown was included in the study as its epilepsy clinic has the highest caseload of patients in the country and represents a predominantly urban population, while Kenema Government Hospital has the highest patient attendance of all the provincial outreach clinics and involves a more rural population.

The study population consisted of patients who attended either of the outpatient clinics and fulfilled the following inclusion criteria: (i) age $\geq$ 18 years, (ii) documented history of epilepsy for a minimum of preceding six months, with the diagnosis made by a qualified clinician. The following patients were excluded from the study: (i) patients who already had a diagnosis of a psychiatric disorder or who were receiving treatment for a psychiatric disorder, (ii) patients refusing to be interviewed.

Participants meeting the inclusion criteria were informed about the purpose and objectives of the study and verbal consent was obtained prior to data collection. Literate patients were given our structured screening questionnaire to fill, while illiterate patients were interviewed and had their forms filled in for them. The data collection form we used is a 10-item screening questionnaire designed for the detection of anxiety and depression. This had been developed for use in the primary healthcare setting in a study in Zambia, and was validated using diagnostic criteria for depression and anxiety disorders in the Diagnostic and Statistical Manual version four (DSM-IV), which was current at the time.[20] It contains 10 items, each scored from 1 to 4 according to symptom frequency, giving a total score range of 10–40, as shown in Appendix 1. Its relative brevity makes this tool optimal for use in the busy primary care setting, and we felt it was better suited to the purposes of our study in comparison to a number of other available tools, which screen for depression only. Furthermore, we considered it appropriate for use in Sierra Leone, given the significant socio-economic similarities with Zambia, where the questionnaire had been developed.

In addition, the following demographic and clinical characteristics were also recorded for each patient: age, sex, religion, marital status, level of education, duration of epilepsy (in years), seizure frequency (per month), type of drug treatment (monotherapy or polytherapy), name of antiepileptic drug(s), and self-reported side effect(s).

Chi-squared test was then used to compare the above variables between individuals with anxiety/depression and those without.

Our study was approved by the Community Health Department Research Committee of the College of Medicine and Allied Health Sciences in Freetown, Sierra Leone.

3. Results

In total, 142 patients were included in the study, with 83 and 59 interviewed at the Freetown and Kenema clinics, respectively. The response rate for the questionnaires administered to the selected participants was 100%.

3.1. Demographics

Of the total of 142 patients, 78 (54.9%) were male and 64 (45.1%) were female. The age range for the total sample was 18–82 years, with a mean age of 29.7 years (SD $\pm$12.6 years). The modal age group was 18–25 years, with 81 (57.0%) patients within that age group. Varied levels of educational background were observed, with patients who had achieved primary education (in full or in part) and those who had completed or were enrolled in senior secondary school forming the largest group; 40 (28.2%) were in primary and 37 (26.0%) in senior secondary school. Regarding religious views, 87 (61.3%) patients were Muslim and 55 (38.7%) Christian. 31 (21.8%) patients were married, 102 (71.8%) were single, and 9 (6.3%) were separated, divorced, or widowed.

3.2. Screening tool scores

The score considered significant for detection of anxiety and depression on the screening tool was 18, identical to the original study.[20] In the total sample, the mean score on our screening questionnaire was 16.3 (SD $\pm$4.7), with a range from 10 to 31. 39 (27.5%) patients scored above the screening cut-off point.

3.3. Clinical characteristics

The mean duration of epilepsy in our patients was 10.5 years, with a range of 0.5–60 years. Recorded seizure frequency ranged from daily seizures to 1 per year. Regarding pharmacological treatment, five antiepileptic drugs were prescribed in the clinics in Freetown and Kenema. Phenobarbitone was the most commonly used drug, being prescribed in 121 (85.2%) patients, either alone or in combination with another AED. 12 patients (8.5%) were on phenytoin, 10 (7.0%) on carbamazepine, 3 (2.1%) on sodium valproate and 2 (1.4%) on lamotrigine. 134 (94.4%) patients were treated with single AED, while 8 (5.6%) were on polytherapy.

The most commonly reported side effects included sedation (N = 61, 43.0%), dizziness (N = 13, 9.2%), both sedation and dizziness (N = 13, 9.2%), and headache (with co-existent sedation; N = 1, 0.7%). No side effects were reported in 55 (38.7%) patients.

When comparing the anxiety/depression group with the non-anxiety/depression group, the following showed statistically significant association with the presence of psychiatric comorbidity: female gender (p = 0.015), seizure frequency of >2 per month (p = 0.001), and self-reporting of sedation and/or dizziness as side effects of AED (p = 0.006).

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